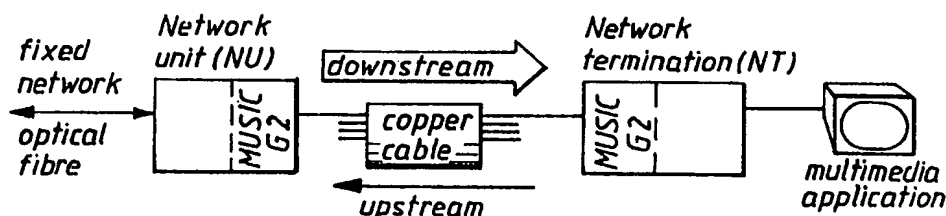




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(54) Title: IMPROVEMENTS IN, OR RELATING TO, MULTI-CARRIER TRANSMISSION SYSTEMS



(57) Abstract

In a multi-carrier system there is always a need to exchange control information between a transmitter and a receiver. This information is generated in the receiver and terminated in the transmitter. This information contains data on the instantaneous characteristics of the channel and information about system change decisions needed to handle the changes in channel characteristics. In systems that use bit-loading techniques the number of transmitted bits per symbol is adapted, or regulated, to the signal-to-noise ratio (SNR) of the current carrier wave. This regulation dynamically affects, in time, the total bandwidth of the system. This variation in bandwidth leads to an absolute system requirement for synchronous configuration of the transmitter and the receiver, in terms of the number of coded/decoded bits per symbol and carrier wave. If this requirement is not met the system will be unable to maintain a connection.